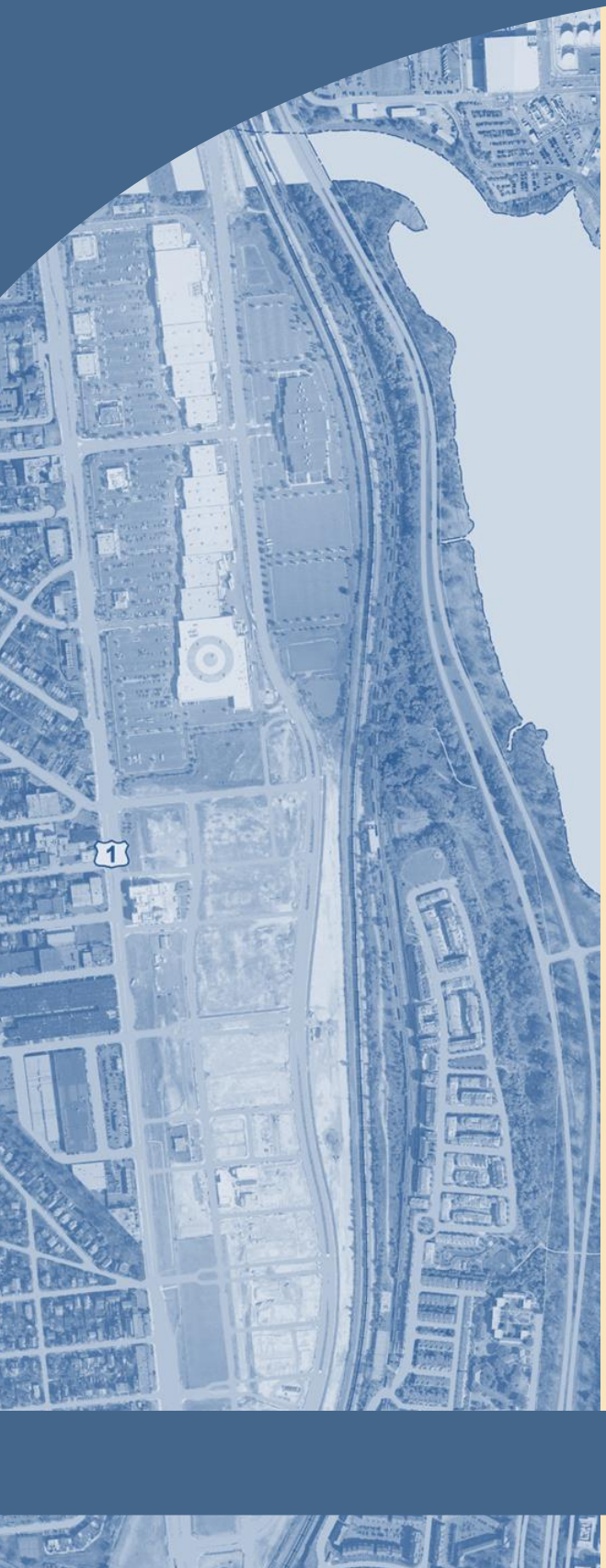
POTOMAC YARD METRORAIL STATION
ENVIRONMENTAL IMPACT STATEMENT



Volume I

Final Environmental Impact Statement

and

Final Section 4(f) Evaluation

June 2016

Federal Transit Administration

CITY OF ALEXANDRIA VIRGINIA

metro

NATIONAL PARK SERVICE

POTOMAC YARD METRORAIL STATION

Final Environmental Impact Statement
and
Final Section 4(f) Evaluation

Pursuant to:
National Environmental Policy Act of 1969 (42 U.S.C. Section 4321 et seq.)
Department of Transportation Act of 1966, Section 4(f) (49 U.S.C. Section 303)

Prepared by:

Federal Transit Administration (FTA)
City of Alexandria, Virginia

with the cooperation of the

Washington Metropolitan Area Transit Authority (WMATA)
National Park Service (NPS)

Terry Garcia Crews

Terry Garcia Crews, *Regional Administrator*
Federal Transit Administration
U.S. Department of Transportation

Date: 6-1-16

Mark Jinks

Mark Jinks, *City Manager*
City of Alexandria, Virginia

Date: 6-1-16

Contact the following individuals for additional information concerning this document:

Ms. Melissa McGill
Community Planner
Federal Transit Administration
1990 K Street NW, Suite 510
Washington, DC 20006-1178
Tel: (202) 219-3565

Ms. Lee Farmer, AICP
Potomac Yard Projects Manager
City of Alexandria
301 King Street,
Alexandria, VA 22314
Tel: (703) 746-4146

Abstract: This document describes and summarizes the potential environmental impacts of a proposed new Metrorail Station and ancillary facilities located at Potomac Yard within the City of Alexandria along the existing Metrorail Blue and Yellow Line between the Ronald Reagan Washington National Airport Metrorail Station and the Braddock Road Metrorail Station. The purpose of the project is to improve accessibility of the Potomac Yard area and provide more transportation choices for current and future residents, employees, and businesses by establishing a new access point to the regional transit system. The Draft EIS evaluated the No Build Alternative and Build Alternatives A, B, and D and B-CSX Design Option. Potential impacts to environmental and socioeconomic resources, whether adverse or beneficial, were assessed. The Draft EIS also provided a summary evaluation of the alternatives, based on their support for the project purpose and need. The Final EIS compares the No Build Alternative with the Preferred Alternative for the project that was identified by the City of Alexandria. The Final EIS identifies impacts of the No Build Alternative and the Preferred Alternative, states how public comments received on the Draft EIS were addressed, incorporates further design and refinement of the project to minimize community and environmental impacts, and describes measures for avoiding, minimizing, or mitigating adverse impacts. Technical Memoranda supporting the findings are included in Volume II and referenced in appropriate sections. A final Section 4(f) Evaluation is provided in Appendix D. FTA will issue a Record of Decision document following a 30-day review period of the Final EIS, rather than a combined FEIS/ROD document, pursuant to the statutory criteria of Pub. L. 112-141 Stat. 405, Section 1319.

The Final EIS is available for viewing on the project website, **www.potomacyardmetro.com**, and is available at Alexandria City Hall and public libraries in the vicinity of the project. The official 30-day review period will conclude on July 11, 2016.

APPROVED AS TO FORM:

DEPUTY CITY ATTORNEY

This page intentionally left blank.

POTOMAC YARD METRORAIL STATION

FINAL ENVIRONMENTAL IMPACT STATEMENT

EXECUTIVE SUMMARY

Introduction

Environmental Impact Statement for a New Metrorail Station at Potomac Yard

The Federal Transit Administration (FTA) and the City of Alexandria, in cooperation with the Washington Metropolitan Area Transit Authority (WMATA or Metro) and the National Park Service (NPS), have prepared this Final Environmental Impact Statement (Final EIS) under the National Environmental Policy Act (NEPA) for construction of a proposed Potomac Yard Metrorail Station. Because the project has the potential to utilize Federal funds, FTA serves as the lead Federal agency. The City of Alexandria will be responsible for the construction of the station. WMATA will accept and operate the Metrorail Station after careful consideration and approval that the constructed station meets the agency's design standards and other applicable requirements.

NPS is a cooperating agency because of the potential of the project to impact natural and cultural resources of the George Washington Memorial Parkway. Any action taken by NPS in conjunction with this project must be consistent with the National Park Service Organic Act, which directs NPS to "conserve the scenery, natural and historic objects, and wild life in the System units" (54 U.S.C. 100101). Construction would include a new Metrorail station, associated track improvements, and pedestrian bridges at Potomac Yard within the City of Alexandria. The station would be located along the existing Metrorail Blue and Yellow Lines between the Ronald Reagan Washington National Airport Metrorail Station and the Braddock Road Metrorail Station.

This executive summary presents key information from the Final EIS and gives information on next steps in the Federal review process for the project. The entire Final EIS document is available for review online at:

www.potomacyardmetro.com

Hard copies of the Final EIS are available for review at Alexandria City Hall and other area locations. See **pages 14-15** for hard copy locations and how to stay informed about the project following the release of the Final EIS. The 30-day review period for the Final EIS will conclude on July 11, 2016.

Why Do We Need a Metrorail Station at Potomac Yard?

Project Purpose

The project is proposed to improve local and regional transit accessibility to and from the Potomac Yard area adjacent to the U.S. Route 1 corridor for current and future residents, employees, and businesses.

Project Need

Currently, the project area is not served by direct access to regional transit services, which provide frequent, higher-speed, and all-day service across multiple jurisdictions of the metropolitan area. This area is served by local bus services that operate in the U.S. Route 1 corridor, including the Crystal City/Potomac Yard Transitway (also known as "Metroway"). Direct access to direct or connecting transit service to/from key regional desitnations, widely spaced stations, and generally dedicated right-of-way, separated from general vehicular traffic, will facilitate regional trips.

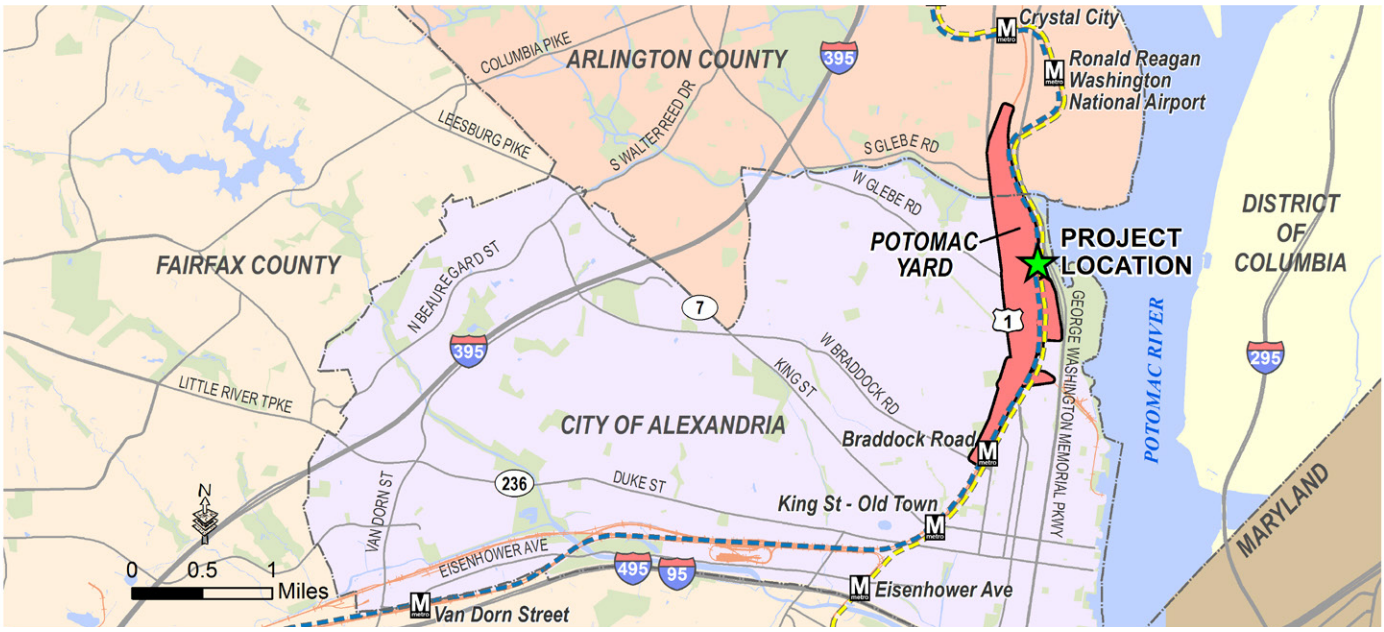
Traffic congestion will increase on U.S. Route 1 even without the proposed development in Potomac Yard. Increasing the share of transit trips would help to manage congestion, reduce auto trips and emissions along transit corridors, and make efficient use of existing infrastructure. Additional transportation options are needed to support the City of Alexandria's redevelopment plans.

Due to the constrained capacity of the roadway network, additional transportation options are needed to accommodate travel demand through transit and other non-auto modes. Direct regional transit access would provide more transportation choices for residents and workers and would enhance connections to regional employment and activity centers.

NPS Action

The purpose of the Federal action by NPS is to respond to FTA's proposed project, considering the purpose and resources of the George Washington Memorial Parkway and its accompanying administered properties.

The Federal action by NPS is needed, because the project would require NPS to issue a permit for the temporary use of land under its administration for construction staging and undertake the exchange of property for the proposed permanent use of a portion of that land for the project. Construction would require a temporary construction staging area within the Greens Scenic Area easement, which is administered by NPS, and the station and realigned track facilities would have permanent visual impacts on the George Washington Memorial Parkway.



Location of Potomac Yard and the Project

Planning for the Potomac Yard Area

Several initiatives have studied and proposed a Metrorail station in the Potomac Yard area:

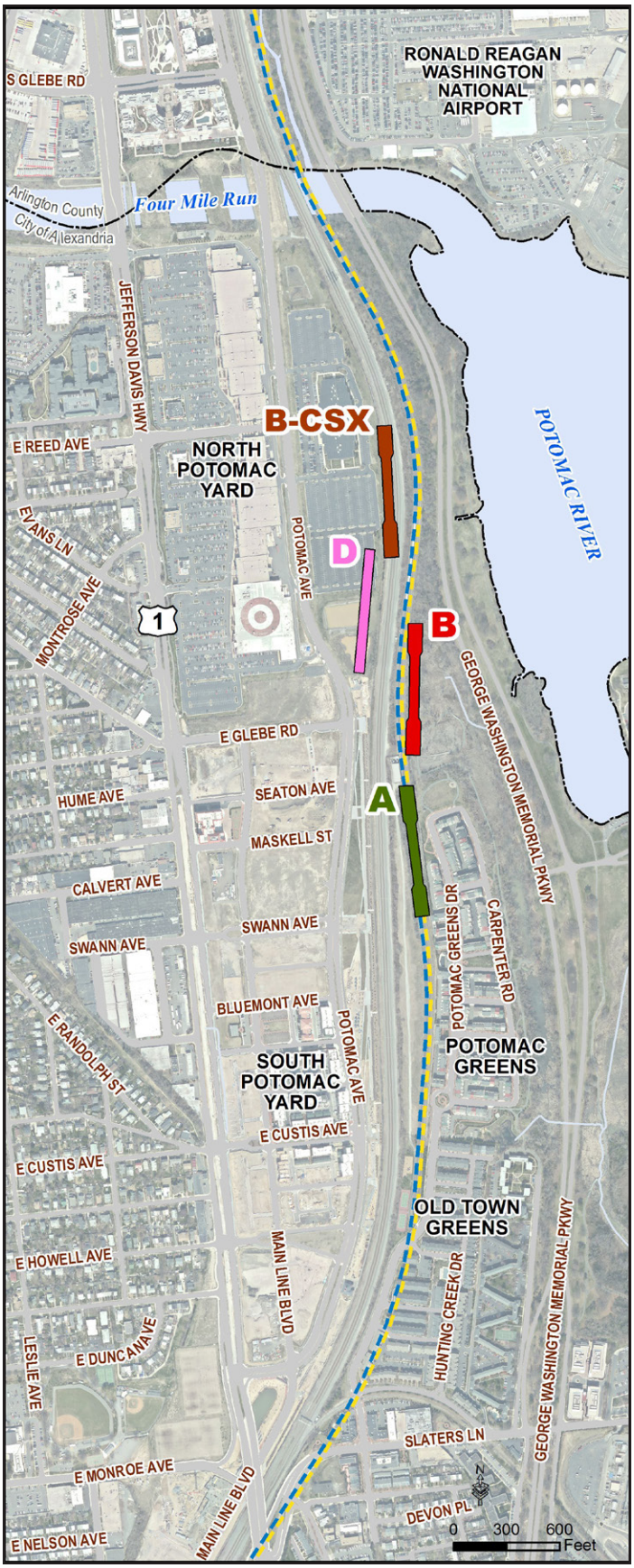
- **1968 and 1975:** Metrorail system plans identified Potomac Yard as a site for a future Metrorail station that could benefit new development.
- **Mid-to-Late 1980s:** The draft *Alexandria 2020* plan proposed a mixed-use, neighborhood development with a Metrorail station. Operations of the existing rail yard began to be phased out.
- **1992/1999:** The City of Alexandria's *Potomac Yard/ Potomac Greens Small Area Plan* identified the potential for a Metrorail station. A 2009 revision included approval for an urban, mixed-use Town Center along East Glebe Road.
- **2010:** The *Potomac Yard Concept Development Study*, conducted by the City of Alexandria and Metro, analyzed eight potential Metrorail station locations, recommending further examination of three locations.
- **2010:** The *North Potomac Yard Small Area Plan* was adopted, envisioning replacement of the existing shopping center with a high-density, transit-oriented neighborhood anchored by a Metrorail station.
- **2011:** The current EIS study began, gathering public and agency input on the scope of the environmental study, project alternatives to be evaluated, and defining agency roles in the process.

Potomac Yard Park, opened Dec. 2013

South Potomac Yard mixed-use development, Potomac Ave at E. Glebe Rd

Existing Potomac Yard Shopping Center

Artist's rendering of planned North Potomac Yard Redevelopment



Description of Alternatives

Alternatives Considered

The Final EIS compares the "No Build Alternative" with the "Preferred Alternative" for the project that was identified by the City of Alexandria. The No Build Alternative describes what would happen if no station was built and provides a baseline with which to compare the impacts of the preferred alternative.

Screening of Initial Alternatives

In March 2011, the project team completed scoping for the EIS. A total of 36 initial alternatives were evaluated and screened to select those that were:

1. Responsive to project purpose and need;
2. Consistent with land use and development plans; and
3. Technically feasible.

Build Alternatives A, B, and D – representing three different Metrorail station locations – emerged from the scoping process. A design option of Build Alternative B, identified as "B-CSX Design Option," was developed in an effort to avoid and minimize adverse impacts of Alternative B to the George Washington Memorial Parkway, Federally owned land administered by NPS. These station locations are shown on the right.

Alternatives Studied and Evaluated in the Draft EIS

The Draft EIS evaluated the No Build Alternative and Build Alternatives A, B, and D and B-CSX Design Option. Potential impacts to environmental resources, including ecological, aesthetic, historic, cultural, economic, social, and health impacts, whether adverse or beneficial to key resources, were assessed. The Draft EIS also provided a summary evaluation of the alternatives, based on their environmental consequences and support for the project purpose and need.

Build Alternative station locations evaluated in Draft EIS

Project Preferred Alternative

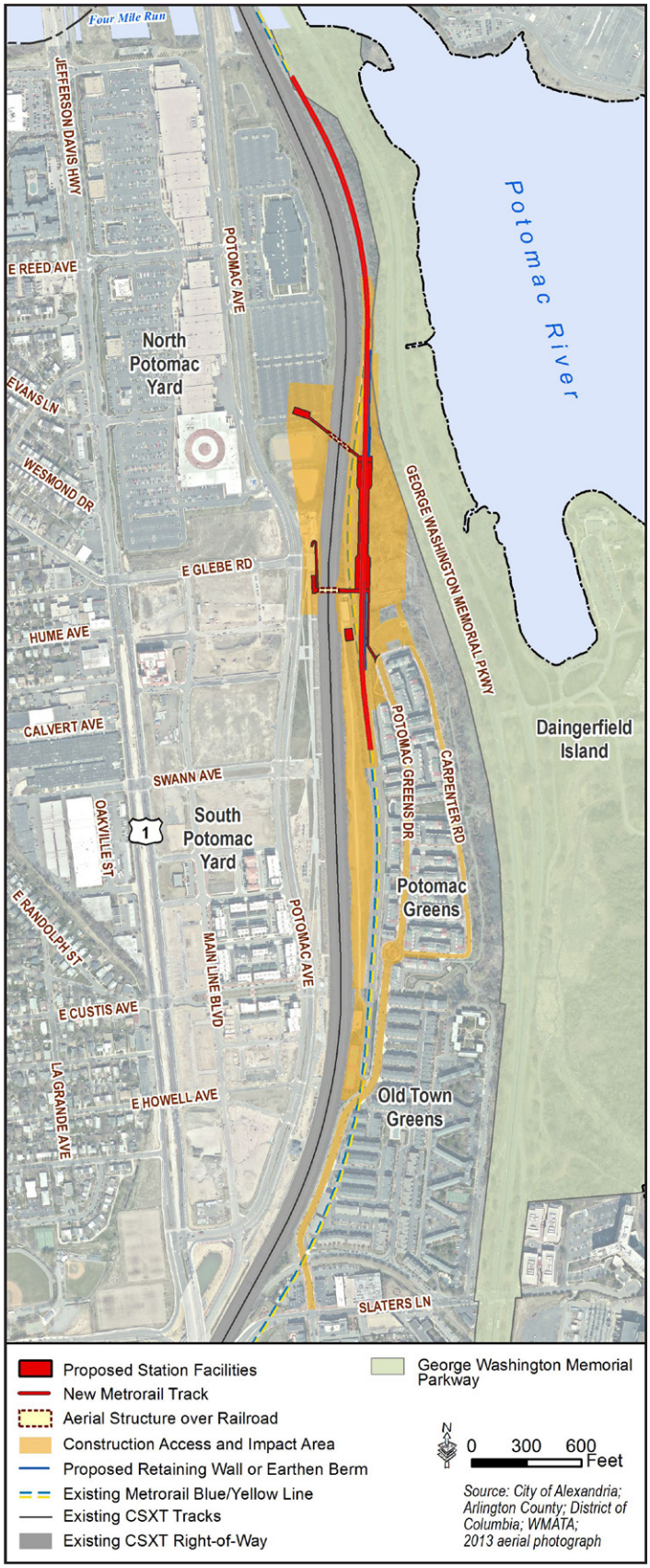
Selection of the Locally Preferred Alternative

In May 2015, following the public hearing and comment period for the Draft EIS, the Alexandria City Council selected Build Alternative B, Option 2 Construction Access (no construction access from the GWMP) as the Locally Preferred Alternative. Prior to consideration by the City Council, the project was reviewed by City of Alexandria staff, boards, and commissions, and the Council held its own public hearing on the project. The adopted City Council resolution stated that Build Alternative B was the best alternative for supporting the high-density mix of uses envisioned for North Potomac Yard, supporting adjacent communities, and realizing the transportation, economic development, and fiscal benefits of the project to the community.

The City's Locally Preferred Alternative is FTA's Preferred Alternative, because it would best meet the project purpose and need. The Preferred Alternative provides a new direct access point to the regional transit system and maximizes potential transit ridership, the shift of automobile trips to other modes, and accessibility to the regional transit system for the greatest number of area residents and employees.

The Preferred Alternative would result in:

- 11,300 weekday station boardings by 2040, about 13 percent more riders than the other Build Alternatives considered in the Draft EIS.
- 6,700 daily automobile trips shifted to transit by 2040 when compared to the No Build Alternative.
- 19 - 30% more residents within a half-mile walking distance compared to the other Build Alternatives.
- 43 - 103% more employees within a quarter-mile walking distance compared to the other Build Alternatives.



Project Preferred Alternative

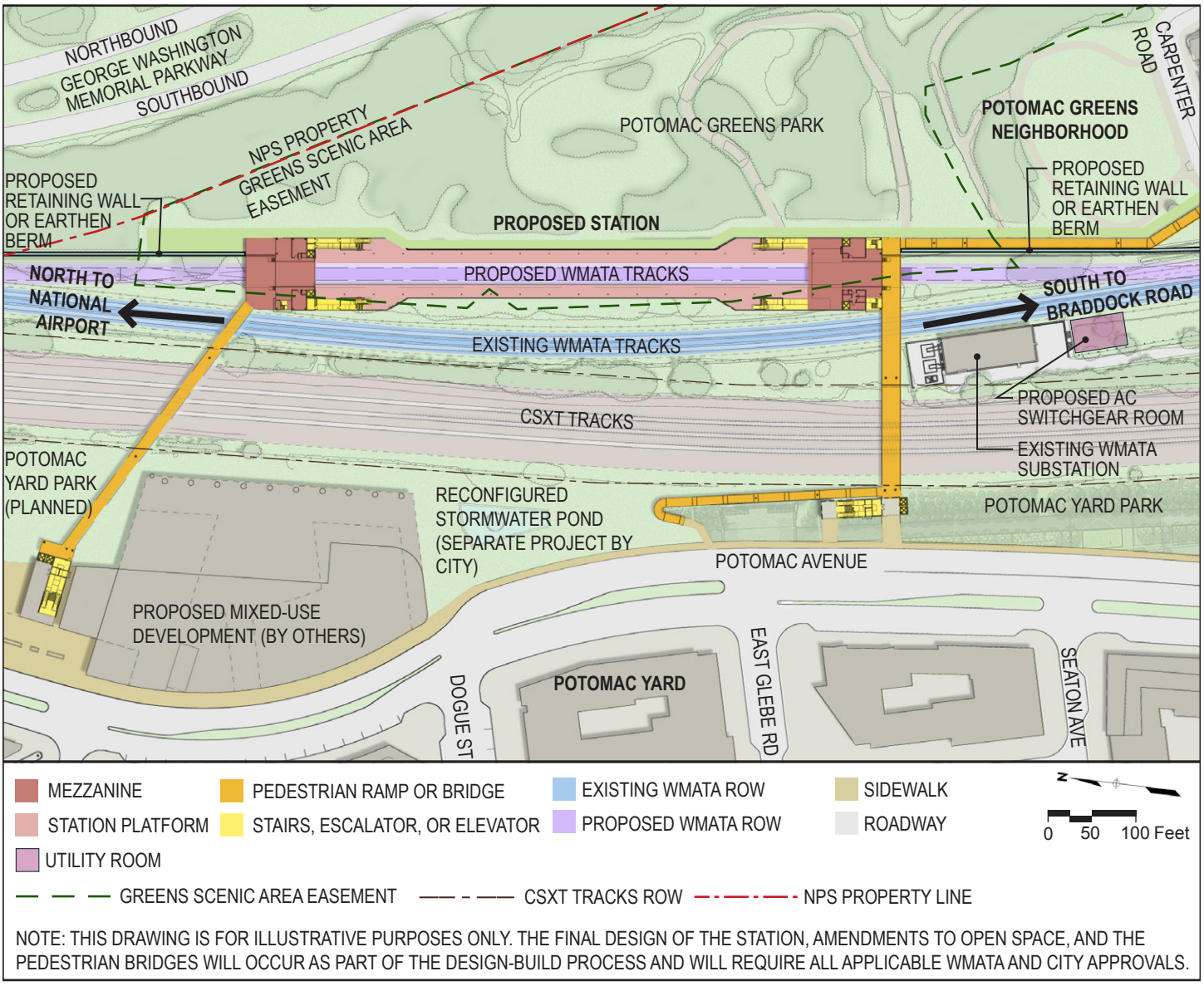
Alternatives Presented in the Final EIS

The Final EIS identifies impacts of the No Build and Preferred Alternatives, states how public comments received on the Draft EIS were addressed, incorporates further design and refinement of the project to minimize community and environmental impacts, and describes measures for avoiding, minimizing, or mitigating adverse impacts.

The **No Build Alternative** includes planned transportation projects expected to be finished by 2040, except the Potomac Yard Metrorail Station. These No Build projects include:

- Completion of the Potomac Yard street network;
- Future pedestrian/bicycle bridge between Potomac Yard and Potomac Greens; and
- Expansion of local bus services.

The **Preferred Alternative** is the Metrorail station alternative identified by the City of Alexandria as best meeting the project purpose and need and other factors described above. The figure below depicts the Preferred Alternative in detail.



Preferred Alternative: Proposed Station Facilities and Connections to Adjacent Uses

- **Location** – between the George Washington Memorial Parkway and the CSXT railroad tracks north of the Potomac Greens neighborhood, and east of the existing Potomac Yard Shopping Center. Portions of the Preferred Alternative would be located within the Greens Scenic Area, a NPS-administered easement located within the City's Potomac Greens Park.
- **Station Design** – station platforms at the same level as the existing Metrorail tracks, with elevated entrance mezzanines providing two pedestrian bridges from the station over the CSXT railroad tracks to Potomac Yard.
- **Pedestrian Connections** – 24-hour pedestrian/bicycle access between Potomac Yard and Potomac Greens via the south pedestrian bridge.

Two station design options are presented in the Final EIS to compare relative visual and ground-level resource impacts:

- **Station Design Option 1** uses retaining walls adjacent to the realigned track and leaves the eastern station wall (side facing the Parkway) exposed down to grade level below the level of the track. The walls would be more visible from the east than earthen berms.
- **Station Design Option 2** uses earthen berms to support the realigned track and screen the lower part of the eastern station wall. The berms would have a wider footprint than the retaining walls and, thus, more impacts to ground-level resources such as wetlands, floodplain, and NPS property.

The final design may incorporate elements of both options.

Construction Access and Staging

Construction activities would occur within identified staging areas and access routes shown on page 5. Construction activities for the project would last approximately two and a half to three years. Opening of the station is expected in 2020. Access to construction staging areas would be from Potomac Greens Drive, Carpenter Road, the Old Town Greens common area, and the Rail Park, with relatively limited construction access from Potomac Yard, and no access from the George Washington Memorial Parkway.

Potential Benefits of the Project

A new Metrorail station would serve residents, employees, and visitors, providing mobility benefits and supporting the City of Alexandria's redevelopment plans for Potomac Yard by helping accommodate higher-density, mixed-use development.

- A Metrorail station in Potomac Yard would provide Metrorail access for thousands of Alexandria residents, employees, and visitors.
- Direct access to Metrorail would maximize the number of people taking transit to and from the Potomac Yard area.
- Additional high-density development, supported by Metrorail, would mean thousands of trips would stay in the community and allow more people to walk or bike to destinations in Potomac Yard to take care of their daily needs.

Transportation Benefits of a Potomac Yard Metrorail Station		
	11,300	Daily boardings at a Potomac Yard Metrorail Station
	34%	Daily trips taken by transit, walking, or bike
	5,000	Daily auto trips removed from the road

Costs and Funding Sources

Estimated Capital Costs

Capital cost estimates are preliminary and based on conceptual engineering completed to date. Capital costs include all costs necessary to construct the station.

Capital Funding Sources

The City has created the Potomac Yard Metrorail Station Fund to manage the revenues collected for the project. Proceeds from the fund are to be used solely for the design, construction, and financing of the station and will be accounted for separately from other City revenues. Fund revenue comes from:

- Net new tax revenues generated by Potomac Yard development (beyond taxes to pay for City and School services);
- Two special tax districts in Potomac Yard; and
- Developer contributions.

Other opportunities for Federal or state funds for construction include Surface Transportation Program funds, loans through the Transportation Infrastructure Financing Innovation Act (TIFIA), additional funding from the Northern Virginia Transportation Authority, and a $50 million loan through the Virginia Transportation Infrastructure Bank (VTIB).

Operating Costs and Funding Sources

The Potomac Yard Metrorail Station would add system-wide operating costs to Metrorail. The City of Alexandria's share of the WMATA operating subsidy for Metrorail is 4.7 percent, or approximately $13.6 million in FY2016. The addition of one station and an estimated 5,000 additional City residents would increase the City's share to 5.6 percent under the approved allocation formula, requiring an additional $2.79 million annual contribution. The City plans to fund the additional WMATA subsidy using the Potomac Yard Metrorail Station Fund.

Conceptual Capital Costs (millions of 2020 Dollars)

Alternative	Low	High
Preferred Alternative	$160	$316

Existing Metrorail Blue/Yellow Line between Potomac Greens and Potomac Yard

How Much Development is Permitted in Potomac Yard?

The amount of residential and commercial development allowed in Potomac Yard depends on the location of a new Metrorail station.

- Levels of development currently permitted are based on the City's *North Potomac Yard Small Area Plan* (2010) and adopted zoning, which assume the construction of a Metrorail station in the vicinity of the Preferred Alternative's location.
- If a station is built in the general location of the Preferred Alternative, current zoning would allow a total of 13.075 million square feet of residential, commercial and office development in Potomac Yard.
- If the No Build Alternative or a different station location other than the Preferred Alternative is chosen, current zoning restricts the amount of development to 9.250 million square feet.

Project Effects for Key Environmental Resource Areas

Key Environmental Resource Areas

An overview of environmental impacts is shown on page 10; temporary construction impacts to environmental resources are listed in the table above. Specific effects to the George Washington Memorial Parkway are also described individually by resource area at the end of the section. Measures to minimize and mitigate adverse impacts of the project are summarized on page 13.

For permanent impacts by the Preferred Alternative that are expressed as a range of acres, the low-end acreage is for Station Design Option 1, and the high-end acreage is for Station Design Option 2. The earthen berms under Station Design Option 2 would have a wider footprint than the retaining walls under Station Design Option 1. The finalized design would have impacts within the ranges presented.

Land Acquisitions and Displacements

The Preferred Alternative would require property for station facilities and right-of-way for realigned track, as well as additional temporary construction easements or access permits. No residential or business displacements would be required.

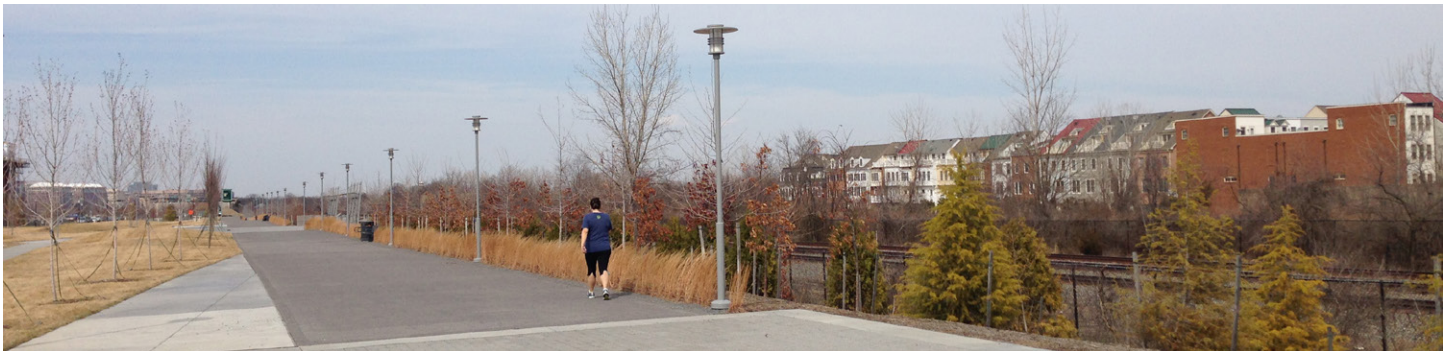
The Preferred Alternative would require permanent acquisition of 0.16 acre to 0.33 acre of the George Washington Memorial Parkway property. In addition, the Preferred Alternative would be a violation of the Greens Scenic Area easement. The Preferred Alternative could not proceed unless the easement is released by NPS.

Local Plans and Zoning

The *North Potomac Yard Small Area Plan* and the zoning for Coordinated Development District (CDD) 19 assume the construction of a Metrorail station at the approximate location of the Preferred Alternative. If a Metrorail station is constructed at a location other than in the vicinity of the Preferred Alternative or is not built, the adopted zoning reduces the amount of permitted development in North Potomac Yard by approximately 3.825 million square feet. The City would need to undertake a revised planning and rezoning process for North Potomac Yard if the No Build Alternative is selected.

Visual Resources

The Preferred Alternative would impact views from the George Washington Memorial Parkway, the Potomac Greens neighborhood, Potomac Greens Park, and Potomac Yard, due to the introduction of new visual elements and removal of vegetation for construction access and staging areas. New visual elements include the station and pedestrian bridges. Under Station Design Option 1 for the Preferred Alternative, the new visual elements would also include retaining walls adjacent to the realigned tracks. The new higher-density development permitted in Potomac Yard under the No Build and Preferred Alternatives will also result in cumulative visual impacts, although this is anticipated to happen whether or not a Metrorail station is constructed at Potomac Yard.



Potomac Yard Park, CSXT railroad tracks, and Potomac Greens

Summary of Permanent Project Effects*

Resource	No Build Alternative	Preferred Alternative
Transportation		
Additional off-peak Metrorail train required	0	1 train
Improved pedestrian/bicycle access between Potomac Greens and Potomac Yard	Yes	Yes
Human Environment		
Land acquisitions	0	4.12 – 4.52 acres
Displacements of businesses or residences	0	0
Consistent with City of Alexandria Plans	No	Yes
Consistent with Regional Transportation Plans	No	Yes
Adverse impacts to viewsheds from GWMP (opening year viewsheds with a reduction in quality)	0	6 viewsheds**
Adverse impacts to viewsheds from Potomac Greens (opening year viewsheds with a reduction in quality)	0	1 viewshed
Adverse impacts to viewsheds from Potomac Yard (opening year viewsheds with a reduction in quality)	0	1 viewshed
Effects to GWMP historic architectural resources and parkland	0	• Transfer of land (0.16 - 0.33 acre) • Station and tracks within historic properties • Visual impacts • Removal of trees
Effects to archaeological resources (sites)	0	0
City of Alexandria park impacts	0	3.00 – 3.23 acres
Greens Scenic Area easement impact	0	1.71 – 1.94 acres
FTA noise criteria impacts	0	0
WMATA noise criteria impacts	7 residences (same as existing)	7 residences (same as existing)
FTA vibration criteria impacts	0	0
WMATA vibration criteria impacts	0	0
Natural Environment		
Increase in impervious surface	0	2.22 acres
U.S. Army Corps of Engineers (USACE) regulated wetlands impacts	0	1.22 – 1.56 acres
NPS regulated wetlands impacts***	0	1.13 – 1.45 acres
Floodplain impacts	0	1.48 – 1.89 acres
Resource Protection Area impacts	0	3.39 – 3.80 acres
Natural habitat loss	0	2.58 – 3.02 acres
Secondary and Cumulative Effects		
Secondary traffic & visual impacts	Yes	Yes
Adverse effects to GWMP historic architectural resources	Yes	Yes
Cumulative traffic, visual & floodplain impacts	None	Yes**

* *For ranges of impacts by the Preferred Alternative, the low-end acreage is for Station Design Option 1, and the high-end acreage is for Station Design Option 2. The finalized design would have impacts within this range. Key measures to minimize and mitigate project effects are summarized on page 13.*

** *Station Design Option 1 would have relatively greater visual impact to GWMP viewsheds, due to the higher retaining walls and exposed lower station wall, compared to the earthen berms in Station Design Option 2. The earthen berms would have greater impacts to NPS wetlands and floodplain.*

*** *NPS regulated wetlands include those within NPS parks and easements that meet NPS wetland definitions; these also encompass USACE regulated wetland within NPS parks and easements.*

Summary of Temporary Construction Effects*

Resource	No Build Alternative	Preferred Alternative
General impacts to roadways and driveways	No	Yes
Use of GWMP roadway	No	No
Effects to GWMP historic architectural resources and parkland	0	0.25 – 0.42 acres
Effects to archaeological resources	0	0
City of Alexandria park impacts	0	10.24 – 10.47 acres
Greens Scenic Area easement impact	0	2.86 – 3.09 acres
USACE regulated wetlands impacts	0	2.88 – 3.22 acres
NPS regulated wetlands impacts**	0	2.92 – 3.24 acres
Resource Protection Area impacts	0	5.35 – 5.76 acres
Cumulative noise, vibration, dust and traffic, effects from other area construction projects	Yes	Yes

* *For ranges of impacts by the Preferred Alternative, the low-end acreage is for Station Design Option 2, and the high-end acreage is for Station Design Option 1. The finalized design would have impacts within this range. Key measures to minimize and mitigate project effects are summarized on page 13.*

** *NPS regulated wetlands include those within NPS parks and easements that meet NPS wetland definitions; these also encompass USACE regulated wetland within NPS parks and easements.*

Noise and Vibration

Residences in Potomac Greens were constructed alongside the pre-existing Metrorail alignment; current Metrorail operations exceed WMATA noise criteria at seven residences. Approval for construction of these residences included a reservation for a future Metrorail station, and the potential construction of a Metrorail station is disclosed in land and ownership documents. The Preferred Alternative is located further north, away from the Potomac Greens neighborhood than the Metrorail station reservation.

The existing noise and vibration conditions would remain under the No Build Alternative and Preferred Alternative. Other noise sources are associated with the proposed station. Metrorail door chimes, train conductor announcements, station public address announcements, and brake noise would be audible in the community as a new noise source. These noises are not expected to contribute to any exceedance or noise impact, based on WMATA and FTA criteria. These noise sources would be evaluated more closely during final design when the station features are finalized, and would be mitigated, as appropriate.

Wetlands and Waterways

Wetlands exist in the area to the east and north of Potomac Greens, between the WMATA tracks and George Washington Memorial Parkway, and in the vicinity of Four Mile Run. The Preferred Alternative would eliminate 1.22 to 1.56 acres of wetland regulated by the U.S. Army Corps of Engineers (USACE) under the Clean Water Act. Wetlands are also regulated by NPS; 1.13 to 1.45 acres of wetlands within the parkland of the George Washington Memorial Parkway and the Greens Scenic Area easement would be permanently impacted.

Construction Access and Staging

Areas designated for construction staging (see areas shaded in orange on page 5) would be cleared of all trees and other natural vegetation and filled or leveled as necessary to make construction activities possible. Affected portions of City parks and private common areas would be temporarily closed to the public. George Washington Memorial Parkway facilities, including roadways, the Mount Vernon Trail, and Daingerfield Island would remain open to users. A screen of vegetation on NPS property along the Parkway would be maintained to minimize the visual impact to users.

George Washington Memorial Parkway/ Mount Vernon Memorial Highway

The George Washington Memorial Parkway, including the historic Mount Vernon Memorial Highway, commemorates the first president, preserves the natural setting, and provides a quality entryway for visitors to the nation's capital. The construction of a Metrorail station at Potomac Yard would affect resources of the Parkway. As a result, the City of Alexandria and NPS have reached agreement on a package of mitigation measures that ensure a net benefit to the Parkway. These provisions of the agreement and other measures to mitigate impacts to the Parkway are included in the table on page 13.

Cultural Resources

The segment of the George Washington Memorial Parkway within the project study area is listed in the National Register of Historic Places through three separate nominations: the Mount Vernon Memorial Highway, the George Washington Memorial Parkway, and the Parkways of the National Capital Region. The Greens Scenic Area easement is also eligible for listing in the National Register as a contributing resource to the Parkway.

The Parkway would be impacted by the construction of portions of the station facilities and realigned track within the boundaries of the historic properties.

Viewsheds and the visitor experience along the Parkway would be impacted by the introduction of a new Metrorail station under the Preferred Alternative, which would impact historic resources by removing vegetation west of the George Washington Memorial Parkway and introducing new non-historic visual elements and views to the west. These new non-historic elements would impact the integrity of the designed historic landscape and degrade the scenic and historic quality and contemplative experience for travelers, important characteristics of the Parkway experience.

The Preferred Alternative would not impact any archaeological sites.

Existing wetland area within Potomac Greens Park and the Greens Scenic Area easement; George Washington Memorial Parkway in the background

Visual Resources

Views from the George Washington Memorial Parkway would be impacted by the introduction of the Metrorail station, especially during winter, under the Preferred Alternative as well as the indirect and cumulative effects of the Potomac Yard redevelopment.

Viewshed impacts would occur from station structures and bridges and clearing of vegetation within the George Washington Memorial Parkway property and Greens Scenic Area easement. Station Design Option 1 would have relatively greater visual impact to Parkway viewsheds, due to the higher retaining walls and exposed lower station wall, compared to the earthen berms in Station Design Option 2.

Under the No Build Alternative, the Potomac Yard redevelopment would also result in cumulative effects to Parkway views.

Wetlands

The Preferred Alternative would permanently impact 1.13 to 1.45 acres of NPS regulated wetlands, with additional temporary wetland impacts. NPS regulated wetlands include those within NPS parks and easements that meet NPS wetland definitions; these also encompass USACE regulated wetland within them.

Construction Traffic

No construction traffic would use the George Washington Memorial Parkway to access the project site. Commercial vehicles are prohibited from the George Washington Memorial Parkway, with limited exceptions, under NPS Management Policies 2006 (9.2.1.2.1) and Federal regulations (36 CFR 5.6).

Proposed Mitigation Measures

Summary of Key Minimization and Mitigation Measures

Resource	Proposed Measure
Land Acquisitions	• Equal value exchange in property between the National Park Service (NPS) and City of Alexandria for permanent land acquisitions within the George Washington Memorial Parkway (GWMP) and Greens Scenic Area easement as required by Federal law (54 U.S.C. 102901).
Land Use and Zoning	• Refinement to Station Design Option 1 to meet zoning height requirement (if option selected).
Visual Resources	• Landscape planting in coordination with NPS to provide a visual buffer to the GWMP. • Refinements to station design, building materials, and lighting fixtures.
Cultural Resources	• Memorandum of Agreement (MOA) under Section 106 of the National Historic Preservation Act to mitigate all adverse effects. Draft provisions include: ○ Ongoing consultation among FTA, the City of Alexandria, Metro, NPS, the Virginia Department of Historic Resources, National Capital Planning Commission, and other consulting parties during design and construction. ○ Land exchange (as described in Land Acquisitions). ○ Design review of prominent elements of the station. ○ Current conditions landscape plan and restoration of vegetative screening. ○ Construction Protection Plan, including Unanticipated Discoveries Plan. • MOA to be finalized in consultation with stakeholder agencies for inclusion in the Record of Decision.
Parklands	• Redesign of Potomac Greens Park to accommodate station entrance. • Net Benefits Agreement between the City of Alexandria and NPS for the GWMP, including: ○ Land exchange (as described in Land Acquisitions). ○ Landscape planting (as described in Visual Resources). ○ Limitations on building height, materials, signage, and lighting on portions of North Potomac Yard adjacent to the Parkway. ○ $12 million for compensatory mitigation projects, including improvements to Daingerfield Island, the Mount Vernon Trail, vegetation surveys, and other studies and plans for the Parkway.
Noise	• Station windscreens and public address speaker designs that limit station noise. • More detailed noise testing during project design.
Wetlands	• Mitigation of all wetland impacts in coordination with the U.S. Army Corps of Engineers, Virginia Department of Environmental Quality, and NPS. • NPS wetland impacts will be mitigated through on-site restoration and compensation for wetland restoration at Dyke Marsh based on the acreage of project impacts.
Floodplains	• Locating station platforms and railroad tracks above the 500-Year Flood Elevation. • Floodproofing of station foundation area within the floodplain.
Ecosystems	• Development and implementation of an Invasive Species Management Plan.
Contaminated Materials	• Site Management Work Plan for safe handling and treatment of contaminated soils and groundwater encountered on-site and safe disposal off-site.
Construction Impacts	• Use of equipment and techniques to minimize impacts such as noise, vibration, dust, and traffic. • Public Communication Plan to inform the public of construction plans, provide regular updates on construction activities, and solve any problems that arise. • Restoration of all temporary impact areas to their same condition or better upon completion of construction activities.

Public Involvement and Next Steps

How Have the Public and Agencies Been Engaged in the Project?

The public has been engaged through:

- Public meetings and community group meetings;
- Project newsletters and email distribution lists;
- Project website; and
- Interaction with community organizations.

The Final EIS contains responses to comments provided by the public and other stakeholders on the Draft EIS and states how those comments were addressed.

Informational materials at all public meetings, including presentation materials, handouts, and comment sheets, have been available in Spanish as well as English, and a Spanish-speaking staff member has been present at all meetings.

In addition, the Alexandria City Council created the Potomac Yard Metrorail Implementation Work Group (PYMIG) to assist in the EIS process by informing City officials and providing a venue for input on the project.

What Are the Roles of Other Agencies?

During project scoping, Federal, state, and local agencies that might have an interest in the project were invited to participate. Agencies have been involved through briefings and additional communication focused on specific areas of expertise within each agency's reviewing purview. Agencies, as well as the public, were invited to comment on the Draft EIS.

Agencies are also involved through concurrent Federal processes, including reviews for consistency with:

- Clean Water Act;
- National Historic Preservation Act ("Section 106");
- U.S. Department of Transportation Act ("Section 4(f)"); and
- Coastal Zone Management Act.

The National Park Service (NPS) is a cooperating agency because of the potential of the project to impact the George Washington Memorial Parkway. Any action taken by NPS must be consistent with the National Park Service Organic Act, which established NPS and governs its activities.

Project public meeting, April 2012

Final EIS Available for Review

The complete Final EIS document is available for review by the general public and has been distributed to key agencies and stakeholders. The official 30-day review period for the Final EIS ends on July 11, 2016. The document can be accessed online at:

www.potomacyardmetro.com

Hard copies are also available for review at the following locations during normal business hours:

- **Alexandria City Hall**
  Office of City Clerk
  301 King Street, Room 2300
  Alexandria, VA 22314
  703-746-4550

- **Charles E. Beatley, Jr. Central Library**
  5005 Duke Street
  Alexandria, VA 22304
  703-746-1702

- **James M. Duncan Branch Library**
  2501 Commonwealth Avenue
  Alexandria, VA 22301
  703-746-1705

- **Cora Kelly Recreation Center**
  25 West Reed Avenue
  Alexandria, VA 22305
  703-746-5554

- **Aurora Hills Branch Library**
  735 18th Street, South
  Arlington, VA 22202
  703-228-5715

- **WMATA**
  Office of the Secretary
  600 Fifth Street, NW, Room 2D-209
  Washington, DC 20001
  202-962-2511

What Happens after Release of the Final EIS?

Record of Decision

Following the release of the Final EIS, a minimum of 30 days must pass before FTA and NPS can make a decision on the proposed action for the project. This review period allows the agencies to consider the purpose and need, weigh the alternatives, balance their objectives, and make a decision.

The Record of Decision (ROD) is the final step for agencies in the EIS process. FTA and NPS will separately review the Final EIS and, pending their review and acceptance, NPS will issue its ROD, after which FTA will issue its own ROD. The RODs will state the agency decisions; identify the alternatives considered, including the environmentally preferred alternative; and state mitigation commitments for unavoidable resource impacts. As the lead Federal agency, FTA will present its basis for the decision regarding the Preferred Alternative.

Engineering, Final Design, and Construction

After FTA and NPS issue RODs to proceed with the project, project engineering and detailed design activities can begin. During this phase of the project, architectural and structural designs for the station, track designs, mitigation measures, and construction phasing plans will be developed in more detail. Architectural design refinements will be coordinated among Metro, the City of Alexandria, NPS, and other stakeholders.

Community open house meeting, April 2015

Metro will issue a Request for Proposals and select a "design-build" contractor to conduct both the project design and construction. As some design elements are finalized, initial construction phases could begin. The construction activities would last approximately three years.

Future Outreach

Public outreach activities and information exchange will continue after the environmental review process. A Public Communication Plan will be developed to continue outreach through the design, engineering and construction phases of the Potomac Yard Metrorail Station. Information regarding final design and construction activities will be disseminated via the City of Alexandria project website, the City's social media accounts, the project e-mail distribution list, newsletters, public meetings, and news releases, as necessary.

The City of Alexandria's PYMIG will function as a forum for the public outreach process through station opening and allow the group to consider the variety of issues that will arise as the project moves into design and construction.

For more information as the project progresses, please visit:

www.potomacyardmetro.com

This Page Intentionally Left Blank

LIST OF ACRONYMS

AA	Alexandria Archaeology
AAI	All Appropriate Inquiries
AACE	Association of Advancement of Cost Estimating
ARPA	Archaeological Resources Protection Act
ACHP	Advisory Council on Historic Preservation
AMI	area median income
APE	Areas of Potential Effect
ARS	Adopted Regional System
ASTM	American Society of Testing and Materials
BAR	Board of Architectural Review
bgs	below ground surface
BMP	Best Management Practice
CAA	Clean Air Act
CBLAD	Chesapeake Bay Local Assistance Department
CCPY	Crystal City/Potomac Yard
CCTV	closed circuit television
CDD	Coordinated Development Districts
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CH_4	methane
CIP	Capital Improvement Program
CLR	Cultural Landscape Report
CLRP	Constrained Long Range Plan
CO	carbon monoxide
CO_2	carbon dioxide
CPP	Construction Protection Plan
CRACA	Colonial Revival Apartment Complexes of Alexandria
CSXT	CSX Transportation
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DASH	Alexandria Transit Company
dB	decibels
dBA	A-weighted decibel
DBH	diameter at breast height

DDOT	District of Columbia Department of Transportation
DOI	United States Department of the Interior
DRPT	Virginia Department of Rail and Public Transportation
DSP	Development Site Plan
DSUP	Development Special Use Permit
EAP	Environmental Action Plan
ECS	Extent of Contamination Study
EDR	Environmental Data Resources Company
EIS	Environmental Impact Statement
EMS	Emergency Management Services
EO	Executive Order
EOC	Emergency Operations Center
ESA	Environmental Site Assessment
ETS	Emergency Trip Stations
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FOIA	Freedom of Information Act
FR	Federal Register
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
GHG	greenhouse gas
GIS	geographic information system
GWMP	George Washington Memorial Parkway
H&H	hydrologic and hydraulic study
HD	height districts
HUD	United States Department of Housing and Urban Development
JD	Jurisdictional Determination
JPA	Joint Permit Application
L_{dn}	24-hour day-night noise level
LEDPA	Least Environmentally Damaging Practicable Alternative
LEED	Leadership in Energy and Environmental Design
L_{eq}	average noise level
LID	low impact design
LOC	Limits of Construction
LOD	Limits of Disturbance

LOS	level of service
LPA	Locally Preferred Alternative
LWCF	Land and Water Conservation Fund Act
MAP-21	Moving Ahead for Progress in the 21st Century Act
MOA	memorandum of agreement
MTPD	Metro Transit Police Department
MVMH	Mount Vernon Memorial Highway (National Park Service)
MWAA	Metropolitan Washington Airports Authority
MWCOG	Metropolitan Washington Council of Governments
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAVD	North American Vertical Datum
NCPPC	National Capital Park and Planning Commission
NCPC	National Capital Planning Commission
NEDIS	National Environmental Data Information System
NEPA	National Environmental Policy Act
NFPA	National Fire Protection Association
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NO	nitrogen oxide
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NO_x	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NPS	National Park Service
NPYSAP	North Potomac Yard Small Area Plan
NRHP	National Register of Historic Places
NVRC	Northern Virginia Regional Commission
NVTA	Northern Virginia Transportation Authority
NWI	National Wetland Inventory
NWP	nationwide permit
O_3	ozone
OEM	Office of Emergency Management
PA	Programmatic Agreement
Pb	lead
PCB	polychlorinated biphenyl

PEM	Palustrine Emergent Wetlands
PFO	Palustrine Forested/Shrub Wetlands
PM	particulate matter
PM_{10}	particulate matter less than 10 microns
$PM_{2.5}$	particulate matter less than 2.5 microns
PNCR	Parkways of the National Capital Region
PYDAC	Potomac Yard Design Advisory Commission
PYGSAP	Potomac Yard/Potomac Greens Small Area Plan
PYMIG	Potomac Yard Metrorail Implementation Work Group
PYPAG	Potomac Yard Planning Advisory Group
RSL	Risk Screening Level
RECs	Recognized Environmental Conditions
RF&P	Richmond, Fredericksburg and Potomac Railroad
RFP	Request for Proposal
ROCC	Rail Operations Control Center
ROD	Record of Decision
RPA	Resource Protection Areas
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SAP	Small Area Plan
SCC	Standard Cost Categories
SHPO	State Historic Preservation Office
SIP	State Implementation Plan for Air Quality
SO_2	sulfur dioxide
SSC	Safety and Security Certification
SSPP	System Safety Program Plan
SVOC	Semi-Volatile Organic Compound
SWPPP	Stormwater Pollution Prevention Plan
TCLP	Toxicity Characteristics Leaching Procedure
TCRP	Transit Cooperative Research Program
TIFIA	Transportation Infrastructure Finance and Innovation Act
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Load
TMP	Transportation Management Plan
TPH-DRO	total petroleum hydrocarbons diesel-range organics
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USCG	United States Coast Guard

USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VdB	vibration decibel
VDCR	Virginia Department of Conservation and Recreation
VDEQ	Virginia Department of Environmental Quality
VDGIF	Virginia Department of Game and Inland Fisheries
VDHR	Virginia Department of Historic Resources
VHWMR	Virginia Hazardous Waste Management Regulations
VLR	Virginia Landmarks Register
VMRC	Virginia Marine Resources Commission
VMT	vehicle miles traveled
VOCs	volatile organic compounds
VPDES	Virginia Pollution Discharge Elimination System
VRE	Virginia Railway Express
VRP	Voluntary Remediation Program
VWP	Virginia Water Protection (permit or program)
WMATA	Washington Metropolitan Area Transit Authority
WMMP	Water Management Master Plan
WNS	White Nose Syndrome affecting the northern long-eared bat
W&OD	Washington and Old Dominion Railroad
WOUS	Waters of the United States
µg	microgram

GLOSSARY OF TERMS

100-year floodplain – Areas with a one-percent annual chance of flooding.

500-year floodplain – Areas with a 0.2% (or 1 in 500) annual chance of flooding.

Accessibility – A measure of the degree of difficulty in reaching other locations, goods, services or activities from a given site. It is influenced by changes in travel time, safety, vehicle operating costs, transportation mode, and local and regional land use conditions.

Adverse effect – In the context of cultural resources reviewed in this report, the term is defined in Section 106 of the National Historic Preservation Act (36 CFR 800.5(a)(1)). An adverse effect to a historic property occurs when the project under consideration would potentially alter any characteristic that qualifies the property for inclusion in the National Register of Historic Places in a manner that would diminish the integrity of the property.

Advisory Council on Historic Preservation (ACHP) – An independent federal agency that promotes the preservation, enhancement, and productive use of the nation's historic resources, as well as advises the President and Congress on national historic preservation policy.

Affected environment – Ambient conditions of the relevant study area at the time an Environmental Effects Report is prepared.

Alight – To depart a transit vehicle.

Alignment – The ground plan of a railway, trail, roadway or other fixed route.

Ambient air – A physical and chemical measure of the concentration of various chemicals in the outside air, usually determined over a specific time period (e.g., one hour, eight hours).

Ambient background noise – The existing cumulative noise that is characteristic of an area based on current activity levels.

Archaeological Resources Protection Act of 1979 (ARPA) – Federal legislation that governs the excavation of archaeological sites on federal and Indian lands in the United States, and the removal and disposition of archaeological collections from those sites.

Area of Potential Effects (APE) – For purposes of complying with Section 106 of the National Historic Preservation Act, a geographic area or areas where an undertaking (e.g., the Potomac Yard Metrorail Station) may directly or indirectly cause alterations in the character or use of historic properties, if any such properties are located in the area of the project.

Arterial – A roadway designed to connect two distant areas at higher speeds and higher capacity travel than a local road.

At-grade – Occurring at the same ground-level elevation, especially in reference to a crossing point or intersection of two separate transportation facilities (e.g. road, sidewalk, bicycle path, railroad, etc.).

Attainment area – An area where the quality of air is as good as or better than the National Ambient Air Quality Standards that are defined in the Federal Clean Air Act. An area may be an attainment area for one pollutant and a non-attainment area for others.

A-weighted decibel (dbA) – See "A-Weighted Sound Level".

A-Weighted Sound Level (A-Weighted Scale) – Decibel measurements in the "A" scale; a method of representing the human ear's interpretations of the loudness of an equal sound level throughout the audible frequency range.

Backwater – A section of a stream where water accumulates behind a blockage.

Best management practices (BMPs) – Specific standards utilized during construction to minimize the impact on surrounding resources.

Boardings, passenger – The count of passengers embarking onto a transit vehicle or route for the purposes of measuring ridership or fare revenue.

Build Alternative(s) – The alternative(s) being evaluated as the proposed action during the EIS process.

Civil Rights Act of 1964 – Title VI of this federal act provides that that no person shall, on the grounds of race, color, national origin and sex, be discriminated against in federally funded programs or activities. Environmental impact statements are required to demonstrate consideration of project compliance with Title VI.

Clean Air Act (CAA) – A federal law designed to control air pollution on a national level. It requires the Environmental Protection Agency to develop and enforce regulations to protect the public from airborne contaminants that are known to be hazardous to human health.

Clean Water Act (CWA) – The primary federal law in the United States governing water pollution. The act established the goals of eliminating releases of high amounts of toxic substances into water, eliminating additional water pollution and ensuring that surface waters would meet standards necessary for human sports and recreation.

Coastal Zone Management Act (CZMA) – An Act of Congress passed in 1972 to encourage coastal states to develop and implement coastal zone management plans. This act was established as a United States National policy to preserve, protect, develop, and where possible, restore or enhance the resources of the Nation's coastal zone for this and future generations.

Community facility – Public or publicly-funded facilities, such as police and fire protection facilities, emergency medical response facilities, hospitals, schools, and libraries, as well as private facilities such as hospitals and schools.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – Commonly known as Superfund, this law was passed in 1980 to create a tax on the chemical and petroleum industries and provide broad federal authority to respond directly to releases or hazardous substances that may endanger public health or the environment.

Comprehensive Plan – Each jurisdiction in the Commonwealth of Virginia is required by state law to institute a comprehensive plan to be used as a guide to decision-making about the natural and built environment. The City of Alexandria's Master Plan was adopted by the City Council on June 13, 1992, and chapters are updated and added on an ongoing basis as needed through Master Plan Amendments. The Master Plan is made up of 18 Small Area Plans (SAPs) covering neighborhoods throughout the City, plus substantive chapters on topics of citywide relevancy, such as Historic Preservation, Urban Design, Transportation, and Open Space.

Constrained Long-Range Plan (CLRP) – The National Capital Region's Financially Constrained Long-Range Transportation Plan identifies all regionally significant transportation projects and programs that are planned in the Washington metropolitan area between 2012 and 2040. It is constrained to include only those projects that can be funded by revenues that are "reasonably expected to be available" as required by federal law and regulations. It includes both transit and highway projects, and meets federal planning and air-quality conformity requirements. The CLRP is prepared and adopted by the National Capital Region Transportation Planning Board.

Contributing property/structure – A property or structure which contributes to the historical integrity of a designated historic district or property.

Code of Federal Regulations (CFR) - The codification of the general and permanent rules published in the Federal Register by the departments and agencies of the Federal Government. The CFR is published annually.

Coordinated Development District (CDD) – A Special zoning district that is created for the purpose of permitting property development. Typically CDDs are 5 or more acres, with construction requiring complex and coordinated rezoning, transportation, and planning efforts.

Council on Environmental Quality (CEQ) – The federal office that oversees implementation of the Federal National Environmental Policy Act of 1969 (see below) and coordinates other federal environmental efforts.

Critical habitat – Defined under the Federal Endangered Species Act of 1973 as areas within a listed species' current range (at the time of listing) that contain the physical or biological features that are essential to that species' conservation or that for some reason require special management and areas outside the species' current range that the Secretary of the Interior determines to be essential to its conservation.

Cross section – The cross-sectional configuration of a transportation corridor (railway, trail, roadway, etc.) that specifies typical widths for tracks/travel lanes, related facilities, buffer areas and total right-of-way.

CSX Transportation (CSXT) – A Class I railroad in the United States, and the main subsidiary of the CSX Corporation.

Cultural resource – Archaeological or historic resources eligible for or listed in the National Register of Historic Places. Cultural resources include buildings, sites, districts, structures, or objects having historical, architectural, archaeological, cultural, or scientific importance.

Cumulative impacts – Changes to the environment that are caused by an action in combination with other past, present and future human actions. In simplest terms, analyzing cumulative effects means considering and accounting for the impacts of a proposed action in the context of the existing transportation system and improvements to it that are reasonably foreseeable in the vicinity. Also referred to as incremental effects.

Cut-through traffic impacts – Impacts caused by traffic using residential streets rather than the local street system intended for through traffic.

determination of eligibility – Decision made by the State Historic Preservation Office (SHPO) regarding whether a historic building or district is eligible for listing in the National Register of Historic Places.

Development Site Plan (DSP) – A architectural plan, landscape architecture document, or detailed engineering drawing of proposed improvements to a given lot.

Development Special Use Permit (DSUP) – A document that allows for the consideration of an alternative method of improving a site that is not specified within the zoning code. A DSUP will neither change the underlying zoning of the lot, nor will it be a permanent solution that affects all future development efforts for that lot or the zone in consideration.

Easement – A temporary or permanent right to use the land of another for a specific purpose sometimes referred to as a "deed restriction." Easements may be purchased from the property owner or donated by the owner.

Effects – Synonymous with impacts of a proposed action; includes both beneficial and detrimental outcomes.

Endangered – A species whose prospects for survival within the state are in immediate danger based on a loss of habitat, over-exploitation, predation, competition, or disease. An endangered species requires immediate attention or extinction will likely follow. The Federal government maintains a list of designated endangered species in accordance with the Endangered Species Act of 1973.

Environmental Impact Statement – A document required by the National Environmental Policy Act of 1969 (see below) for any proposed major federal action that may significantly affect the environment (defined as a Class III action). The purpose of the EIS is to provide full and open evaluation of environmental issues and alternatives, and to inform decision-makers and the public of reasonable alternatives that could avoid or minimize adverse impacts and enhance the quality of the environment.

Environmental Site Assessment (ESA) – A report prepared for a real estate holding that identifies potential or existing contamination liabilities.

Environmental Justice – Executive Order (EO) 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," provides for equal protection from environmental hazards and fair treatment for all people regardless of race, ethnicity, or economic status, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment implies that no population of people bear an unequal share of negative environmental impacts of pollution or environmental hazard resulting from industrial, municipal, and commercial operations or the execution of federal, state, or local policies.

Environmentally Preferable Alternative – The environmentally preferable alternative is the alternative within the range of alternatives presented in a Draft EIS that best promotes the goals of NEPA. In general, this is the alternative that causes the least damage to the environment and best protects natural and cultural resources. In practice, one alternative may be more preferable for some environmental resources while another alternative may be preferable for other resources. Note that identifying this alternative is also a requirement for Records of Decision (RODs) [40 CFR 1505.2(b)].

Flood Insurance Rate Maps (FIRM) – The official map of a community on which the Federal Emergency Management Agency (FEMA) has delineated both the special hazard areas and the risk premium zones applicable to the community.

Floodplain – A nearly flat plain along the course of a stream or river that is naturally subject to flooding. In this document, the term floodplain generally refers to one of the Flood Hazard Areas defined by the National Flood Insurance Program and mapped in a Flood Insurance Rate Map.

Fugitive dust – Dust that leaves a property during construction, demolition, or other induced activity and that can alter the air quality at a given location.

Geographic Information System (GIS) – A computerized mapping system that includes database and analytical capabilities.

George Washington Memorial Parkway (GWMP) – the legislated unit of the National Park Service which contains the roadway known as the George Washington Memorial Parkway and incorporates the Mount Vernon Memorial Highway.

Grade-separated – Used to describe an alignment that is elevated or below ground, or crossings that use an overpass or an underpass. Grade separation allows traffic or transit vehicles to pass through intersections without stopping for opposing traffic. Heavy rail transit such as the Metrorail system must be grade-separated because it uses a high-voltage third rail.

Greens Scenic Area easement – In 2000, as part of an agreement to allow redevelopment of the Arlington County portion of Potomac Yard, the owner of the property granted a perpetual scenic easement (known as the Greens Scenic Area) to the United States Department of the Interior for much of the land to the north of the Potomac Greens neighborhood and east of the Metrorail tracks within the City of Alexandria. The scenic easement was created "…for the purpose of conserving and preserving the natural vegetation, topography, habitat and other natural features now existing within the Greens Scenic area" (Release Agreement and Scenic Easement, Title Document #000005341, p.0029).

Ground-borne vibration and noise – The vibration-induced levels that propagate over ground between the source and a receptor such as a building; typically assessed indoors.

Habitat – The area or environment where an organism or ecological community normally lives or occurs.

Hazardous material – Any toxic substance or explosive, corrosive, combustible, poisonous, or radioactive material that poses a risk to the public's health, safety or property.

Headway – The time interval between vehicles moving in the same direction on a particular route; also called service frequency.

Heavy rail – An electric railway with capacity for a heavy volume of traffic and characterized by exclusive rights-of-way, high speed and rapid acceleration. The existing WMATA rail system comprises heavy rail lines. Heavy rail is different from commuter rail and light rail systems.

Historic District – A concentration of sites, buildings, structures, or objects that are listed or eligible for listing in the National and Virginia Register of Historic Places.

Impaired stream – A stream with water quality that does not support its designated use as defined by the State of Virginia in accordance with Section 303(d) of the Federal Clean Water Act.

Indirect effects – See "secondary effects".

Intermodal – Referring to connections between or integration of two or more transportation modes (e.g., bus, train, automobile, etc.).

Invasive species – A species that is non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic harm, environmental harm, or harm to human health.

Joint Permit Application (JPA) – A form used by the United States Army Corps of Engineers, the Virginia Marine Resources Commission, the Virginia Department of Environmental Quality, and the Local Wetlands Boards for permitting purposes involving water, wetlands, and dune/beach resources, including, but not limited to, major water supply and water withdrawal projects.

Jurisdictional Determination (JD) – Regulatory review of previously identified wetlands and waters of the United States Army Corp of Engineers (USACE) in compliance with Section 404 of the Clean Water Act.

Jurisdictional stream – A stream that is regulated by Section 404 of the federal Clean Water Act.

Jurisdictional wetland – A wetland that is regulated by Section 404 of the federal Clean Water Act.

Land use – Classification providing information on land cover and the types of human activity occurring on a parcel of land, such as "commercial," "industrial," "residential," or "open space."

Leadership in Energy and Environmental Design (LEED) – A suite of rating systems for the design, construction, and operation of high performance green buildings, homes, and neighborhoods. It is intended to provide building owners and operators a concise framework for identifying and implementing practical and measurable green building design, construction, operations, and maintenance solutions.

Least Environmentally Damaging Practicable Alternative (LEDPA) – The practicable alternative that minimizes impacts to aquatic resources, taking into account impacts to listed species and other aspects of the human environment. Refer to Section 404 of the Clean Water Act for a detailed definition of "practicable."

Level of service (LOS) – A letter grade designation used to describe given roadway conditions with "A" being at or close to free-flow conditions and "F" being at or close to over-saturation of the roadway; usually based on the progression of vehicles through the green phase of a signal, driver discomfort/frustration, lost travel time, and fuel consumption.

Limits of Construction (LOC) – The likely "footprint" or physical extent of the construction area of the proposed project.

Limits of Disturbance (LOD) – The likely "footprint" or physical extent of the proposed project.

Locally Preferred Alternative (LPA) – The alternative selected by local decision-makers as the preferred solution to the project's identified needs.

Low impact design (LID) – An approach to land development or redevelopment that works with nature to manage stormwater as close to its source as possible. LID employs principles such as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product.

Low-income – Any household with income at or below the U.S. Bureau of the Census poverty thresholds.

Memorandum of Agreement (MOA) – A document that describes the terms and conditions agreed upon to resolve the potential adverse effects of a federal agency program, under Section 106 of the National Historic Preservation Act.

Metropolitan Washington Council of Governments (MWCOG) – An independent nonprofit association that brings area leaders together to address major regional issues in the District of Columbia, suburban Maryland, and Northern Virginia. It is the local Metropolitan Planning Organization for the Washington DC Metropolitan area.

Minority – As recognized by Federal law, a member of one of the following races: (1) Black or African American, (2) American Indian or Alaska Native, (3) Asian, (4) Native Hawaiian or other Pacific Islander, (5) Hispanic or Latino Origin.

Mitigation – Action necessary to reduce, minimize or eliminate an impact to the affected environment by the proposed project.

Mitigation banking - The restoration, creation, enhancement, and preservation of wetlands and/or other aquatic resources, for the purpose of providing compensatory mitigation in advance of authorized impacts to similar resources.

Mixed-use – Combination of land uses, such as residential uses combined with office, retail, public, entertainment, or even manufacturing uses.

Mobility – The degree to which a person is able to move about; it is determined by a person's economic situation in addition to any physical disabilities she or he may possess.

Mount Vernon Memorial Highway (MVMH) – A memorial highway and surrounding lands dedicated to George Washington connecting Arlington Memorial Bridge to the Mount Vernon Estate later incorporated into the GWMP.

Moving Ahead for Progress in the 21st Century Act (MAP-21) – A funding and authorization bill to govern United States federal surface transportation spending. A key portion of the bill is the reformation of the environmental review process, which introduces a four-year review deadline for projects.

Multi-use trail – A trail designed for a variety of non-motorized transportation modes and recreational uses, including walking, jogging, bicycling, and in-line skating as permitted by the facility's design and regulations.

National Ambient Air Quality Standards (NAAQS) – Nationwide air quality standards established by the U.S. Environmental Protection Agency (EPA) in accordance with the federal Clean Air Act Amendments of 1990 that apply to six principal types of pollutants.

National Environmental Policy Act of 1969 (NEPA) – A law enacted in 1969 that established a national environmental policy requiring that any project using Federal funding or requiring Federal approval, including transportation projects, examine the effects the proposal and alternative choices have on the environment before a decision is made.

National Flood Insurance Program – A program of the Federal Emergency Management Agency (FEMA) that provides flood insurance to participating communities, issues floodplain management regulations, and identifies and maps floodplains.

National Historic Landmark – A place that is designated by the US Department of the Interior as possessing exceptional value or quality in illustrating and interpreting the heritage of the United States. The National Park Service administers the National Historic Landmarks program for the Secretary of the Interior. Only 3% of properties listed in the National Register of Historic Places are designated as National Historic Landmarks.

National Historic Preservation Act (NHPA) – Federal legislation intended to preserve historical and archaeological sites in the United States.

National Pollutant Discharge Elimination System (NPDES) – A program, as authorized by the Clean Water Act, that controls water pollution by regulating point sources that discharge pollutants into waters of the United States.

National Register of Historic Places (NRHP or National Register) – A federal list of buildings, sites, districts or other properties that have a historic significance. The National Register of Historic Places is maintained by the Keeper of the National Register.

National Wetlands Inventory (NWI) – A geospatial database of wetlands maintained by the Division of Habitat and Resource Conservation of the U.S. Fish and Wildlife Service.

Neighborhood – A contiguous residential area with distinct characteristics or boundaries.

No Build Alternative – The future condition of the study area in the absence of the proposed project. The No Build Alternative serves as a benchmark against which the potential impacts of other alternatives can be compared. It assumes that no improvements will be made with the exception of other committed projects and periodic maintenance and minor enhancements needed to maintain safe operation.

Non-contributing – See "contributing resource."

Notice of Intent (NOI) – Notice of intent means a notice that an environmental impact statement will be prepared and considered (40 CFR 1502.14(d)).

Off-peak travel hour – An hour of a 24-hour day when traffic is less than the maximum observed for the same 24-hour period.

Operations and maintenance (O&M) costs – Costs associated with operating and maintaining transit service, including vehicle operators, fuel, vehicle maintenance, and infrastructure (stations, tracks, right-of-way) maintenance.

Order of magnitude cost – A general cost figure used for comparative purposes.

Ozone (O_3) – A gas found in two different layers of earth's atmosphere: in the stratosphere (beginning seven to ten miles above earth's surface) and the troposphere (beginning at earth's surface and extending up to the stratosphere). In the stratosphere, ozone occurs naturally and provides a protective layer shielding earth from harmful ultraviolet radiation. In the troposphere, ozone is a major component of photochemical smog and can harm the respiratory systems of humans and other animals. It is a prevalent and widespread criteria pollutant that is regulated by the U.S. Environmental Protection Agency in accordance with the Clean Air Act. Ozone in the troposphere is produced by complex chemical reactions involving nitrogen oxides, which are among the primary pollutants emitted by combustion sources; hydrocarbons, released into the air through the combustion, handling and processing of petroleum products; and sunlight. This report is concerned with potential effects of the proposed state action on tropospheric ozone emissions and ambient levels.

Palustrine – Relating to a system of inland, nontidal wetlands characterized by the presence of trees, shrubs, and emergent vegetation (vegetation that is rooted below water but grows above the surface). Palustrine wetlands range from permanently saturated or flooded land (as in marshes, swamps, and lake shores) to land that is wet only seasonally (as in vernal pools).

Particulate matter (PM_{10} and $PM_{2.5}$) – Particle pollution is a complex mixture of extremely small particles and liquid droplets. Particle pollution is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The US Environmental Protection Agency regulates two categories of particle pollution: fine particles ($PM_{2.5}$), which are 2.5 micrometers in diameter and smaller; and inhalable coarse particles (PM_{10}) which are smaller than 10 micrometers. (A micrometer is 1/1000th of a millimeter; there are 25,400 micrometers in an inch.)

Passive park – A park where the primary focus is low-impact, quiet recreation, including hiking, meditation, and nature study.

Peak period – The primary morning and afternoon/evening commute periods, the hours of which are defined differently according to the agency or study purpose.

Phase I Archaeological Survey – The first step in a cultural resource archaeology investigation. The Phase I Survey assesses the potential presence and locations of potential archaeological sites within a study area using background research and field reconnaissance.

Pocket track – Track that is located between the main tracks and are used to store out-of-service trains and equipment.

Polychlorinated biphenyl (PCB) – An odorless, tasteless, clear to pale-yellow, viscous liquid formed by the electrophilic chlorination of biphenyl with chlorine gas. PCBs were widely used as dielectric and coolant fluids in the United States until their production was banned in 1979 due to their environmental toxicity.

Potomac Yard Planning Advisory Group (PYPAG) – An advisory group created by the City of Alexandria Department of Planning and Zoning that oversees Potomac Yard Development projects within the city.

Preferred Alternative – A NEPA term for the alternative, which the lead agency believes, would fulfill its statutory mission and responsibilities, giving consideration to social, economic, environmental, technical and other factors.

Profile – The vertical alignment of a transit alignment, which typically shows the elevation of the alignment as it relates to ground level.

Programmatic Agreement (PA) – A document that spells out the terms of a formal, legally binding agreement between federal agency and other state and/or federal agencies.

Project sponsor – The City of Alexandria is the project sponsor for the Potomac Yard Metrorail Station environmental study being conducted in compliance with the National Environmental Policy Act.

Protected species – An organism that is legally protected because it is considered endangered or threatened to become endangered, or one of special concern. Protection may be granted at the federal, state or local levels.

Recognized Environmental Condition (REC) – A term defined by ASTM International, originally known as the American Society for Testing and Materials (ASTM). It is defined under ASTM E1527 - 05 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. “The presence or likely

presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not recognized environmental conditions."

Record of Decision (ROD) – The final step in the EIS process under NEPA. Documentation of the lead federal agency's formal decision on the proposed action. This document constitutes the basis for the federal agency's environmental finding on the project.

Resource Protection Area (RPA) – Land at or near the shoreline that has an intrinsic water quality value due to the ecological and biological processes it performs or that is sensitive to impacts that may result in significant degradation to the quality of state waters.

Ridership – The number of people using a public transportation system during a given time period.

(Public) Right-of-way (ROW) – The area over which a legal right of passage exists; land used for public purposes in association with the construction or provision of transportation projects or other linear infrastructure and the associated facilities.

Riparian buffer – A strip of naturally vegetated land along a stream. The vegetation along the banks and in the adjacent floodplain area is characterized by plants that associate with waterways and nearby moist soils. Riparian buffers protect water quality and other natural functions of the stream by filtering storm water runoff, stabilizing stream banks, moderating water temperatures, and providing habitat for wildlife.

Runoff – The part of precipitation, snow melt, or irrigation water that runs off the land into streams and lakes. It can carry pollutants from the air and land into receiving waters.

Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users (SAFETEA-LU) – A federal law that guarantees funding for highways, highway safety, and public transportation. At $244.1 billion, it is the largest surface transportation investment in the history of the United States.

Scoping Process – Scoping is the first step in the environmental review process and involves using public and agency participation to develop possible solutions and identify issues regarding a proposed project. Scoping also helps determine needs, objectives, resources and constraints within the study area. The formal Public Scoping Process for the Potomac Yard Metrorail Station Environmental Study began with the publication in the Federal Register of a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) on January 27, 2011 (Volume 76, No. 18). The Scoping Summary Report summarized the initial public and agency input that was gathered during the project scoping period from February 10, 2011 through March 15, 2011.

Secondary effects –Effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Secondary effects may include growth-inducing effects and other effects related to changes in the pattern of land use, population density or growth rate, and related effects on air and water and on other natural systems, including ecosystems. Also referred to as "indirect effects."

Section 106 – A provision of the National Historic Preservation Act of 1966 that requires consideration of historic and archaeological properties and resources in Federal actions. Section 106 requires Federal agencies to assess potential effects of proposed actions on historic resources and provide opportunity for comment by the Advisory Council on Historic Preservation.

Section 303(d) – A provision of the federal Clean Water Act of 1977 that requires states to assess the conditions of their waters to determine where water quality is impaired (does not fully meet standards) or threatened (is likely to violate standards in the near future). The result of this review is the 303(d) list of impaired waters within the state, which must be submitted to the EPA every other year. Section 303(d) also requires states to prioritize and target water bodies on their list for development of water quality improvement strategies.

Section 4(f) – A provision of the Department of Transportation Act (DOT Act) of 1966 which stipulates that DOT agencies cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless the following conditions apply: there is no feasible and

prudent alternative to the use of land, and the action includes all possible planning to minimize harm to the property resulting from use. In 2005, the provision was modified so that the U.S. Department of Transportation (DOT) may determine that certain uses of Section 4(f) land would have *de minimis* impacts and would have no adverse effect on the protected resource. When this is the case, and the responsible official(s) with jurisdiction over the resource agrees in writing, compliance with Section 4(f) is greatly simplified.

Section 6(f) – A provision of the U.S. Land and Water Conservation Funds Act of 1965 which protects and maintains the quality of federal, state, and local investments in parkland and/or recreational resources. The LWCF established a funding source for federal acquisition of park and recreation lands and matching grants to state and local governments for recreation planning, acquisition, and development. Once purchased using these funds, these lands are protected from conversion to uses other than public outdoor recreational uses. Any such conversion must be in accordance with an existing comprehensive statewide outdoor recreation plan and must be approved by the Secretary of the Interior. If a conversion occurs, the land must be replaced with other recreational properties of at least equal fair market value and with reasonably equivalent usefulness and location.

Section 404 – A provision of the federal Clean Water Act of 1977 which establishes a program to regulate the discharge of dredged or fill material into waters of the United States. Proposed impacts to waters of the U.S., including wetlands, streams and other open water bodies, are regulated by this provision.

Section 404 Permit – A permit issued in accordance with Section 404 of the Clean Water Act of 1977. The permitting program is administered by the U.S. Army Corps of Engineers.

Sensitive receiver / receptor – A land use that would receive noise or vibration caused by a project. The type of the land use in question (e.g., residences, schools, libraries, laboratories, etc.) is generally sensitive to noise and vibration effects.

Sensitive view – An outdoor area that is visible by *sensitive viewers* (see below).

Sensitive viewer – A person who may be affected by a change in the local outdoor visual and aesthetic environment at a given location.

Shovel test pit – A hole, typically round and one foot in diameter, excavated with a shovel through soil layers. Archaeologists use shovel test pits spaced at regular intervals to identify the presence of archaeological deposits or sites.

Small Area Plan (SAP) – See “Comprehensive Plan”.

Sole source aquifer – An underground water supply designated by the Environmental Protection Agency (EPA) as the "sole or principal” source of drinking water for an area.

Standard Cost Categories (SCC) – In 2005 FTA implemented the Standard Cost Categories, to establish a consistent format for the reporting, estimating, and managing of capital costs for New Starts projects.

State Historic Preservation Office (SHPO) – A state administrative agency responsible for carrying out consultation in accordance with the National Historic Preservation Act of 1966, as amended, and other state historic preservation regulations.

State Historic Preservation Officer (SHPO) – A person designated and appointed by the state governor to administer the State Historic Preservation Program, and the office of professional staff supporting the program.

State Implementation Plan (SIP) – A state plan for the establishment, regulation, and enforcement of Federal air pollution standards. It is reviewed and approved by the US Environmental Protection Agency in accordance with the Clean Air Act Amendments of 1990.

Station platform – The area where passengers board and disembark from a train or subway vehicle.

Stormwater – Runoff water that is generated by a rain event. Stormwater discharges include runoff from land, pavements, building rooftops and other surfaces. Stormwater runoff can accumulate a variety of pollutants such as oil and grease, chemicals, nutrients, metals, and bacteria as it travels across land before discharging into surface and other receiving waters. Heavy surges in stormwater runoff can cause other negative effects, including flooding and erosion, to streams and adjacent low-lying areas, especially in urbanized watersheds.

Stormwater management pond(s) (SWMP) – A best BMP designed to enhance stormwater quality by slowing the velocity of runoff, thereby settling sediment and potential contaminants.

Streetcar – A streetcar is a form of rail transit that generally refers to a type of light rail transit which uses smaller vehicles than typical light rail transit systems and generally operates as single-car trains. Modern Streetcars are capable of operating in mixed traffic and along exclusive fixed-rail guideways.

Title VI – See "Civil Rights Act of 1964".

Topography – The surface features of a place or region.

Traction Power Substations – Facilities that convert alternating current power supplied by the power company into direct current power for the rail system.

Transit-dependent population – Defined by the Federal Transit Administration as persons in one or more of the following categories: 1) without private transportation, 2) elderly (over age 65), 3) youths (under age 18), or 4) persons below poverty or median income levels defined by the U.S. Census Bureau.

Transit-Oriented Development (TOD) – A land use designation intended to encourage the use of transit. Measures employed in areas with TOD designations include increased densities, clustered development, pedestrian amenities, parking restrictions, and urban design enhancements.

Transportation Infrastructure Finance and Innovation Act (TIFIA) – The TIFIA program provides Federal credit assistance to nationally or regionally significant surface transportation projects, including highway, transit and rail. The program is designed to fill market gaps and leverage substantial private co-investment by providing projects with supplemental or subordinate debt.

Transportation Improvement Program (TIP) – A prioritized list of regional transportation projects and proposed funding to be implemented in stages over several (usually 3 to 6) years. The projects are selected from those proposed in the systems management element and the long-range element of the regional transportation planning process. This program is required as a condition for the region to receive federal transit and highway grants.

Turbidity – A cloudy water quality condition due to suspended silt or organic matter.

Underground storage tank (UST) – A tank located at least partially underground and designed to hold gasoline, other petroleum products or chemicals.

Uplands – Land that is well-drained and rarely, if ever, inundated.

Vegetated buffer/vegetative buffer – A vegetated upland or wetland area next to rivers, streams, lakes, or other open waters which separates the open water from developed areas and agricultural land. Vegetated buffers provide a variety of aquatic habitat functions and help improve or maintain local water quality. A vegetated buffer can be established by maintaining an existing vegetated area or by restoring a cleared or degraded area. See also "riparian buffer".

Vehicle miles traveled (VMT) – on highways, the measurement of the total miles traveled by all vehicles in an area for a specified time period.

vibration decibel (VdB) – A unit of measurement that records and observes the repetitive motion of a structure (its vibration). The scale is logarithmic.

Visual resource – A local resource, such as a structure or outdoor setting, valued for its visual or aesthetic qualities.

VISSIM – A widely used micro-simulation traffic modeling software, which simulates individual vehicles or pedestrians.

Washington Metropolitan Area Transit Authority (WMATA) – The agency that plans, builds, operates, and maintains the Washington D.C. metropolitan region's Metrorail and Metrobus transit systems.

Waters of the United States – All waters defined under the Clean Water Act 40 CFR 230.3(s) and subject to U.S. Army Corps of Engineers jurisdiction. Waters of the United States include those which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters

which are subject to the ebb and flow of the tide. The definition includes all impoundments, tributaries of and wetlands adjacent to such waters.

Wetland – As defined by the Clean Water Act wetlands are "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."